Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.-126. (cancelled)

127. (currently amended) A composition comprising cells and two single-copy probes that have a combined length of at least 50 kb, each labeled with a distinguishable label, for detecting a chromosomal aberration involving the BCR and ABL genes, said chromosomal aberration having an ABL gene side and a BCR gene side, wherein one of said probes hybridizes to the ABL gene side of said chromosomal aberration and comprises a region that hybridizes to the ABL gene telomeric to the 200 kb region between exons Ib and II, and the other of said probes hybridizes to the BCR gene side of said chromosomal aberration and comprises a region that hybridizes to the BCR gene centromeric to the breakpoint region, wherein the probe that hybridizes to the BCR gene side has the designation PEM12 or the probe that hybridizes to the ABL gene side has the designation c-hu-ABL; and wherein the probes are hybridized to chromosomal DNA *in situ* in the cells.

128. (currently amended) A composition comprising cells and two single-copy probes that have a combined size of at least 50 kb for detecting a chromosomal aberration, each probe labeled with a distinguishable label, wherein one of said probes is at least 35 kb, hybridizes to a part of the ABL gene on one side of said chromosomal aberration and comprises a region of the ABL gene telomeric to the 200 kb region between exons Ib and II, and the other of said probes is at least 18 kb, hybridizes to a part of the BCR gene on the other side of said chromosomal aberration and includes a region of the BCR gene centromeric to the breakpoint region, wherein the probe that hybridizes to the part of the ABL gene side has the designation c-hu-ABL or the probe that hybridizes to the BCR gene side has the designation PEM12; and wherein said probes hybridize to an aberrant chromosome[[;]] and ~~wherein the probes~~ are hybridized to chromosomal DNA *in situ* in the cells.

129. (cancelled)

130. (previously presented) The composition of claim 127 wherein the labels comprise fluorescent labels.

131. (previously presented) The composition of claim 130 wherein the fluorescent labels are distinguishable under a microscope as different colors.

132. (cancelled)

133. (previously presented) The composition of claim 127 wherein the cells comprise those in interphase of mitotic division.

134. (previously presented) The composition of claim 133 wherein the probes after hybridization are juxtaposed as doublets if a chromosomal aberration is present.

135. (cancelled)

136. (previously presented) The composition of claim 134 wherein the chromosomal aberration is further defined as comprising a translocation, said translocation formed by breakpoints which occur on the long arms of chromosomes 9 and 22.

137. (previously presented) The composition of claim 136 wherein the translocation breakpoints are further defined as occurring at the locations designated t(9;22)(q34;q11).

138. (previously presented) The composition of claim 137 wherein the translocation breakpoints are further defined to occur in the BCR and ABL genes respectively, and a fusion gene is formed by the translocation, and said fusion gene comprises portions of the BCR and ABL genes.

139. (previously presented) The composition of claim 127 wherein the cells comprise a sample of human tissue.

140. (previously presented) The composition of claim 139 wherein the human tissue sample comprises peripheral blood.

141. (previously presented) The composition of claim 139 wherein the human tissue sample comprises bone marrow.

142. (previously presented) The composition of claim 127 wherein the cells comprise a sample of cultured cells.

143.-145. (cancelled)

146. (previously presented) The composition of claim 138 wherein the presence of said fusion gene is diagnostic or prognostic for acute lymphocytic leukemia (ALL).

147. (previously presented) The composition of claim 138 wherein the presence of said fusion gene is diagnostic or prognostic for chronic myelogenous leukemia (CML).

148. (cancelled)

149. (previously presented) The composition of claim 127 wherein the aberrant chromosome is the Philadelphia chromosome.

150. (previously presented) The composition of claim 127, wherein the probe that hybridizes to the BCR gene side of said chromosomal aberration has the designation PEM12.

151. (previously presented) The composition of claim 127, wherein the probe that hybridizes to the ABL gene side of said chromosomal aberration has the designation c-hu-ABL.

152. (previously presented) The composition of claim 128, wherein the probe that hybridizes to the part of the ABL gene one side of said chromosomal aberration has the designation c-hu-ABL.

153. (previously presented) The composition of claim 128, wherein the probe that hybridizes to the part of the BCR gene on the other side of said chromosomal aberration has the designation PEM12.

154. (previously presented) A kit for the detection of chromosomal aberrations, comprising a first and second single-copy nucleic acid probe, which have a combined length of at least 50 kb, each labeled with a distinguishable label, said first probe specifically hybridizes to a part of the ABL gene on one side of said chromosomal aberration at a region of the ABL gene telomeric to the 200 kb region between exons Ib and II and said second probe specifically hybridizes to a part of the BCR gene on the other side of said chromosomal aberration at a region of the BCR gene centromeric to the breakpoint region, wherein said probes hybridize to an aberrant chromosome wherein said probes are of sufficient length to be specifically detected in cytogenetic analysis; and wherein said first probe has the designation c-hu-ABL.

155. (previously presented) A kit for the detection of chromosomal aberrations, comprising a first and second single-copy nucleic acid probe, which have a combined length of at least 50 kb, each labeled with a distinguishable label, said first probe specifically hybridizes to a part of the ABL gene on one side of said chromosomal aberration at a region of the ABL gene telomeric to the 200 kb region between exons Ib and II and said second probe specifically hybridizes to a part of the BCR gene on the other side of said chromosomal aberration at a region of the BCR gene centromeric to the breakpoint region, wherein said probes hybridize to an aberrant chromosome wherein said probes are of sufficient length to be specifically detected in cytogenetic analysis; and wherein said second probe has the designation PEM12.